Int. J. Aquat. Biol. (2019) 7(1): 9-13
ISSN: 2322-5270; P-ISSN: 2383-0956
Journal homepage: www.ij-aquaticbiology.com

Short Communication

First report of the Golden Mantis Shrimp, *Lysiosquilla tredecimdentata* Holthuis, 1941 (Crustacea: Stomatopoda) from Chennai coastal waters, Southeast India

Krishnan Silambarasan*[1], Palaniswamy Senthilkumaar[2]

[1]Fishery Survey of India, Visakhapatnam, Andhra Pradesh, India.
[2]Post Graduate and Research Department of Zoology, Sir Theagaraya College, Chennai, India.

Abstract: The golden mantis shrimp, *Lysiosquilla tredecimdentata* was reported for the first time from Chennai coastal waters, Southeast India. One adult male specimen was found in the trawl by-catch near Kasimedu fishing harbour on September, 2014. The specimen was identified, described, illustrated and morphometrically measured.

Article history:
Received 9 January 2019
Accepted 22 February 2019
Available online 25 February 2019

Keywords: New record, Golden mantis shrimp, Tamil Nadu.

Introduction

Stomatopods, also called mantis shrimps, are elongate, flattened, shrimp-like or lobster-like crustaceans (Carpenter and Neim, 1998). These species are among the most aggressive and behaviourally complex crustaceans. All species are active predators and mark one of the few radiations of obligate carnivores within the Crustacea. Stomatopod crustaceans are common members of benthic ecosystems in tropical and subtropical marine and brackish waters throughout the world. Few species are known from temperate seas (Hans-georgmuller, 1994). Characteristic features of stomatopods are the large powerful raptorial appendages. Prey is captured by 'spearing' or 'smashing'; depending on the dactyl is extended or held folded during the strike. The two methods of prey capture distinguish two broad functional groups; the "smashers" and the "spearers". These two groups comprise the order 'stomatopoda', the only living representatives of the subclass Hoplocarida (Calman, 1900).

Worldwide 485 species, 115 genera and 17 families of mantis shrimp are currently described (WoRMS December 25, 2018). The Indian Stomatopod fauna comprises 66 species, of which 17 species are recorded from Chennai coastal waters (Divibala and Thirumilu, 2013). The pantropical stomatopod genus *Lysiosquilla,* which includes the largest known stomatopods, comprises 12 species, five of which are reported in the Indo-West Pacific region.

Our knowledge of Indian stomatopod fauna from the seas around India is fairly good, as many extensive studies were made. The monograph on Kemp (1913) is an extensive work in Indo-Pacific region. Subsequently, the contributions by Kemp and Chopra (1921), Chopra (1934, 1939), Alikunhi (1967) and Shanbhogue (1970) have added further information on the taxonomy of this group. Recently Pillai and Thirumilu (2006) have reported *L. tredecimdendata* from Cuddalore fishing harbour, Tamil Nadu coast of India. The present study reports the first occurrence of golden mantis shrimp, *L. tredecimdentata,* from Kasimedu fishing harbour, Chennai coast, Tamil Nadu, India.

Materials and Methods

A single specimen of *L. tredecimdentata* was collected from trawl by-catch in the Kasimedu fish landing centre (Fig. 1) from a depth of around 80-120 m during the early hours of September 25, 2014. The specimen

*Corresponding author: Krishnan Silambarasan
E-mail address: silambuplankton@hotmail.com
DOI: https://doi.org/10.22034/ijab.v7i1.542

Table 1. Morphometry of the only collected specimen of *Lysiosquilla tredecimdentata* Holthuis, 1941 male.

Morphometric characters	Measurement (mm)
Total length	129.0
Carapace length	22.1
Corneal index	32.5
Rostral plate length	4.5
Rostral plate width	6.0
Antennal scale length	13.5
Antennal scale width	4.0
Telson length	18.0
Telson width	26.0

was collected by hand picking and its identification was carried out using standard guidelines (Manning, 1978; Ahyong et al., 2008). Therefore, confirmation of the species, the specimen was deposited in the Department of Zoology (Voucher Number: Zoological Museum Specimen-234), Sir Theagaraya College (STC), Chennai.

Terminology and size are based on Manning (1978) and Ahyong (2001). All measurements are in millimeters. Total length (TL) is measured along the midline from the anterior margin of the rostral plate to the posterior median spines of the telson. Carapace length (CL) is measured along the midline and exclusive of rostrum. Corneal index, given as 100 * CL divided by cornea width (CW) (Table 1).

Results and Discussion

Taxonomy

Phylum Arthropoda von Siebold, 1848
Sub phylum Crustacea Brunnich, 1772
Class Malacostraca Laterille, 1802
Sub class Hoplocarida Calman, 1904
Order Stomatopoda Laterille, 1817
Super family Lysiosquilloidea Giesbrecht, 1910
Family Lysiosquillidae Giesbrecht, 1910
Genus *Lysiosquilla* Dana, 1852
Species *Lysiosquilla tredecimdentata* Holthuis, 1941

Materials examined: Material examined India, Tamil Nadu, Chennai, Kasimedu fishing harbour, trawl catch, 24.IX.2014, coll. K. Silambarasan, 1 male (TL: 129 mm), ZOMUSP 234 (Fig. 2).

Family characteristics: Carapace devoid of carinae; telson lacking distinct median carina; eye T-shaped, cornea bilobed. Marginal teeth or spines of telson in conspicuous, rostral claw slender and elongate, adapted for spearing prey, with toothed edge of dactylus bearing numerous, large, serrated teeth or spines. Lysiosquillids are usually are clearly banded with alternate light and darkly pigmented bands.

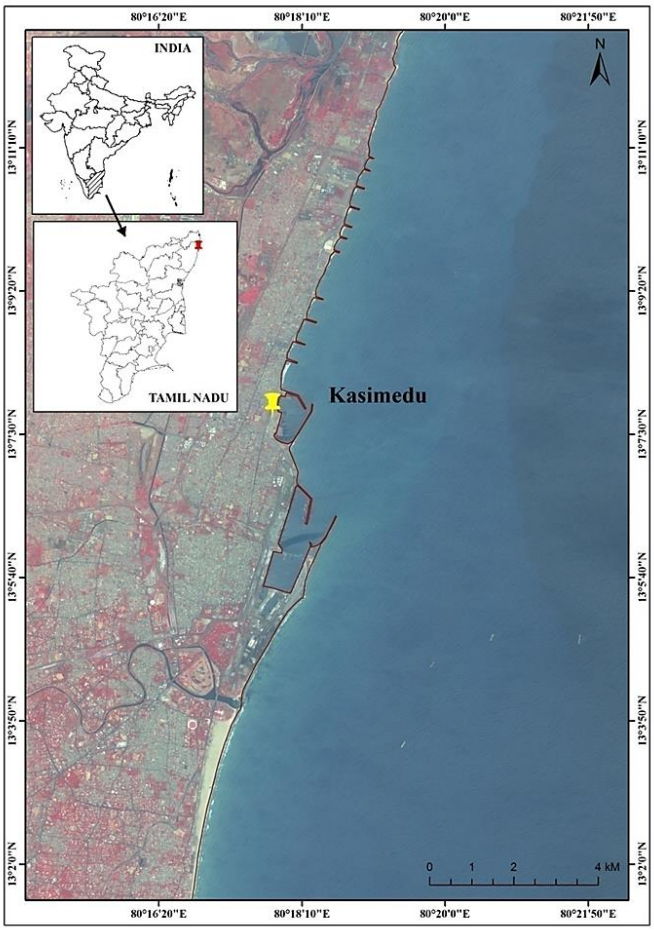

Figure 1. Map showing the location of the study area on the Kasimedu fishing harbour, Chennai coast.

Species description: Anterior part of carapace depicting rostrum and antennal scale is given in Figure 3a; rostrum-dome shaped, broader at the base and pointed at the distal end (Fig. 3b), antennal scale long, leaf-like with rounded border at both basal and distal borders, dactlus of raptorial claw possessing eight teeth (Fig. 3c), spination on postero-lateral and posterior border 4 + 4, the uppermost 2 pairs the sharpest (Fig. 3d).

Color: Dorsal base color dark brown or black and yellow horizontal bands alternate all over the body;

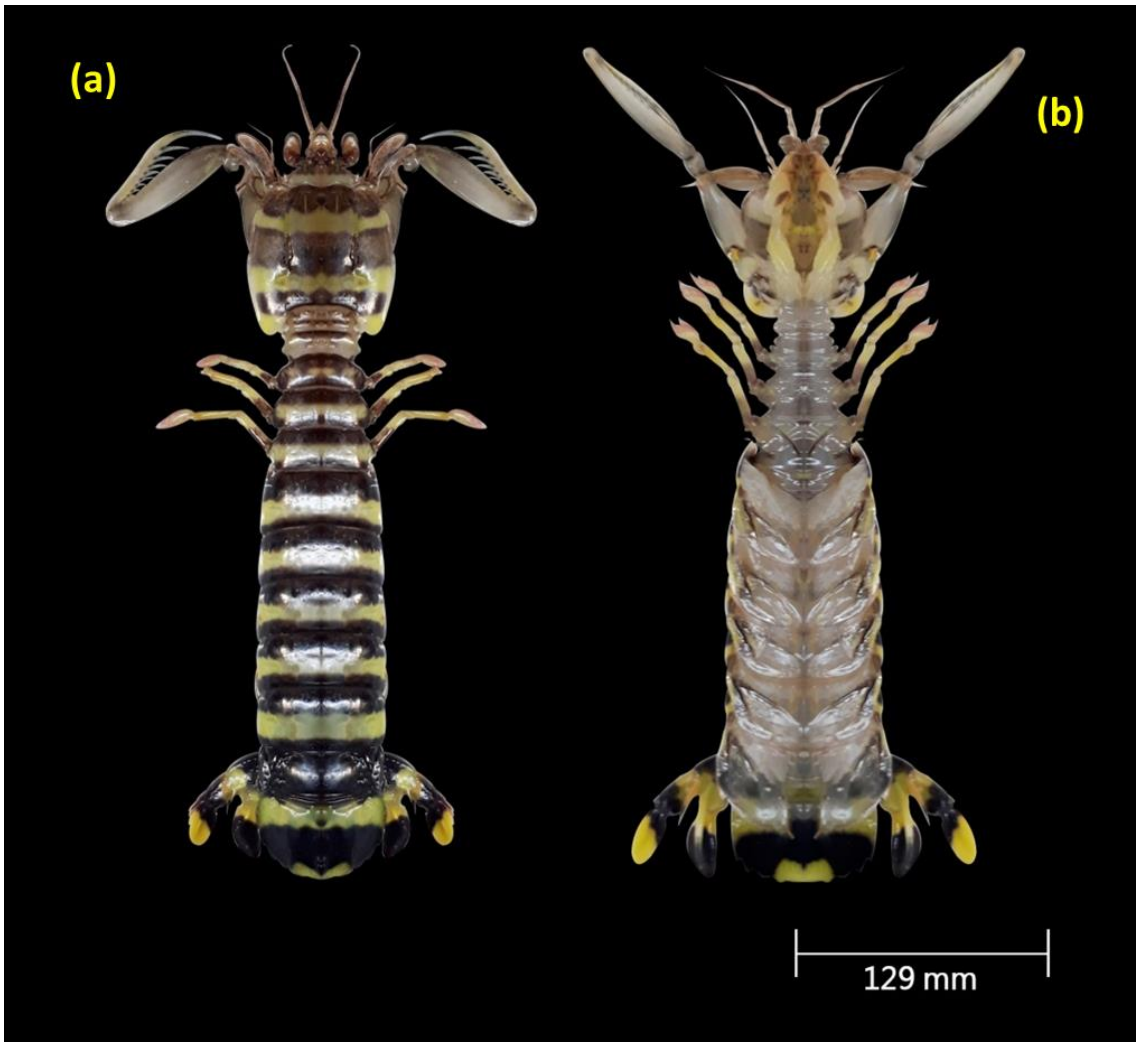

Figure 2. *Lysiosquilla tredecimdentata* Holthuis, 1941, male collected from Kasimdeu Fishing Harbour, Chennai coast. (a) Dorsal view, and (b) ventral view.

Uropodal exopod with distal half of proximal segment and proximal two-thirds of distal segment black; Scale with brown outline. Pereiopods with distal pink setae.

Habitat: The species inhabits deep burrows on intertidal sand and mud flat areas (Ahyong, 2001).

Distribution: Western Indian Ocean from Aden (Yemen), India, Pakistan, Madagascar, South Africa, to Thailand, Taiwan, Australia and Central Pacific waters (Shanbhogue, 1986; Ahyong, 2001).

Remarks: The specimen collected is in perfect agreement with the original description given by Holthuis (1941). Shanbhogue (1970) on comparing the original specimens of the two species remarked that: the tip of the rostrum reached either to base or up middle or beyond tip of dorsal process and the raptorial dactylus was with 10-11 teeth. In Holthuis specimens, the tip of the rostrum did not surpassed the dorsal process of ophthalmic segment and the raptorial dactylus showed 13 teeth. While re-describing the species; Manning (1968) observed that the antennal peduncle did not surpassed the eyes. In the present specimen, the antennal peducle is extended slightly beyond the eye.

According to Manning (1978) *L. tredecimdentata* is a distinctive species that resembles *L. capensis* Hansen, 1895 and *L. sulcirostris* Kemp, 1913 and differs from *L. sulcata*, in having an elongated oval shaped antennal scale with a dark pigmented border, antennal protopod, and a posterior spine on the ventral keel of the eighth thoracic somite. It differs from *L. capensis* in a broad triangular rostrum with a distinct dorsal carina and 10-13 rather than 15-17 teeth on the

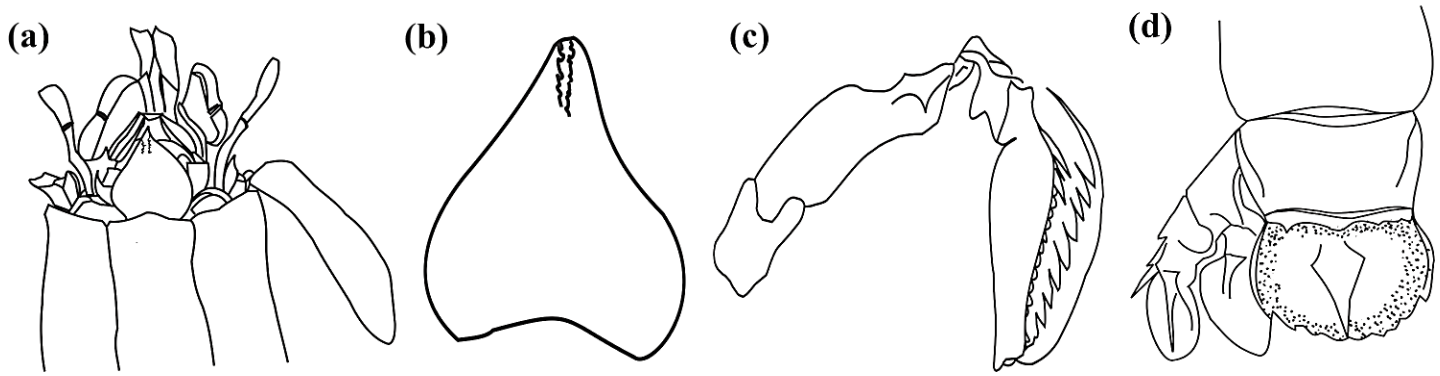

Figure 3. *Lysiosquilla tredecimdentata* Holthuis, 1941. (a) Anterior part of carapace, (b) rostrum showing rostrum and antennal scale, (c) raptorial chela, and (d) sixth abdominal somite, telson and uropod.

claw. *Lysiosquilla tredecimdentata* differs from *L. sulcirostris* in having a broader rostral plate that lacks deep grooves flanking the median carina and in having 10-13 rather than 7-8 teeth on the dactylus of the claw. The colouration of present specimen resembles with the observations reported by Ahyong et al. (2008) in having yellow and black bands alternatively on carapace, abdomen and telson.

Acknowledgments

The authors are grateful to Dr. M. Kathirvel, formerly Principal Scientist, Central Institute of Brackish Water Aquaculture (ICAR) for critical evaluation of the manuscript and offering valuable suggestions.

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